

voir, it should be noted that a pressurized reservoir may be used in certain embodiments or under certain conditions (e.g., during priming and/or air purging). Among other things, a pressurized reservoir might facilitate filling of the pump chamber, for example, following retraction of the pump actuation member 54 shown and described with reference to FIGS. 15A-15D.

[0512] Additionally, while various embodiments are described herein with reference to a pump motor disposed in a reusable portion of a housing, it should be noted that a pump and/or a pump motor may alternatively be situated in the disposable portion, for example, along with various components that come into contact with the fluid. As with some of the other motors described herein, a motor disposed in the disposable portion may include one or more shape-memory actuators.

[0513] It should be noted that section headings are included for convenience and are not intended to limit the scope of the invention.

[0514] In various embodiments, the herein disclosed methods including those for controlling and measuring flow of a fluid and for establishing communication amongst linked components may be implemented as a computer program product for use with a suitable controller or other computer system (referred to generally herein as a “computer system”). Such implementations may include a series of computer instructions fixed either on a tangible medium, such as a computer readable medium (e.g., a diskette, CD-ROM, ROM, EPROM, EEPROM, or fixed disk) or transmittable to a computer system, via a modem or other interface device, such as a communications adapter connected to a network over a medium. The medium may be either a tangible medium (e.g., optical or analog communications lines) or a medium implemented with wireless techniques (e.g., microwave, infrared or other transmission techniques). The series of computer instructions may embody desired functionalities previously described herein with respect to the system. Those skilled in the art should appreciate that such computer instructions can be written in a number of programming languages for use with many computer architectures or operating systems.

[0515] Furthermore, such instructions may be stored in any memory device, such as semiconductor, magnetic, optical or other memory devices, and may be transmitted using any communications technology, such as optical, infrared, acoustic, radio, microwave, or other transmission technologies. It is expected that such a computer program product may be distributed as a removable medium with accompanying printed or electronic documentation (e.g., shrink wrapped software), preloaded with a computer system (e.g., on system ROM, EPROM, EEPROM, or fixed disk), or distributed from a server or electronic bulletin board over the network (e.g., the Internet or World Wide Web). Of course, some embodiments of the invention may be implemented as a combination of both software (e.g., a computer program product) and hardware. Still other embodiments of the invention are implemented as entirely hardware, or substantially in software (e.g., a computer program product).

[0516] It should be noted that dimensions, sizes, and quantities listed herein are exemplary, and the present invention is in no way limited thereto. In an exemplary embodiment of the invention, a patch-sized fluid delivery device may be approximately 6.35 cm (~2.5 in) in length, approximately 3.8 cm (~1.5 in) in width, and approximately 1.9 cm

(~0.75 in) in height, although, again, these dimensions are merely exemplary, and dimensions can vary widely for different embodiments.

[0517] While the principles of the invention have been described herein, it is to be understood by those skilled in the art that this description is made only by way of example and not as a limitation as to the scope of the invention. Other embodiments are contemplated within the scope of the present invention in addition to the exemplary embodiments shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention.

What is claimed is:

1. A method for delivering an infusion medium to a user, the method comprising:
 - providing a first housing portion and a second housing portion;
 - providing the first housing portion and the second housing portion with connection structure to allow the first housing portion and the second housing portion to be selectively engaged with each other for operation and disengaged from each other to allow disposal of the first housing portion without disposing of the second housing portion;
 - providing a pumping assembly;
 - providing a first exit valve in the pumping assembly wherein the first exit valve inhibits fluid flow from a reservoir to a pump exit;
 - providing a dispensing assembly downstream from the pumping assembly, and in fluid communication with the reservoir by a flow line;
 - providing an exit assembly downstream from the dispensing assembly, the exit assembly in fluid communication with the pump exit; and
 - maintaining the infusion medium in the first housing portion so as to not contact the second housing portion.
3. A method according to claim 1, wherein the one-way valve comprises a duckbill valve structure.
4. A method according to claim 1, further comprising connecting the reservoir having an interior volume for containing an infusion medium in fluid flow communication to the dispensing assembly.
5. A method according to claim 4, further comprising supporting the reservoir with the first housing portion.
6. A method according to claim 1, further comprising:
 - providing the dispensing assembly with a variable volume metering chamber;
 - providing the second housing portion with an interior volume and a sensor; and
 - locating a variable volume metering chamber in the dispensing assembly.
7. A method according to claim 6, further comprising positioning a resilient fluid diaphragm in the variable volume metering chamber wherein the variable volume metering chamber expands and contracts with the flow of fluid into and out of the variable volume metering chamber.
8. The method according to claim 1 wherein the pumping assembly is in the second housing portion.
9. The method according to claim 1, further comprising:
 - operatively connecting a shape-memory alloy drive device to the pumping assembly, to selectively move the pumping assembly.